



Wisconsin Department of Transportation



July 1, 1997

**Division of Transportation Infrastructure
Development**

Bureau of Highway Construction
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**Subject: 1997 Supplemental Specifications
Wisconsin Department of Transportation**

We are sending one copy of this publication for your use. There is no charge.

It will become effective for all contracts in the letting of October 14, 1997 and thereafter until amended. Previously-issued supplemental specifications and interim supplemental specifications will no longer be in effect after October 13, 1997 unless referenced in previously-let contracts.

Eligible engineering consulting firms shall be responsible for obtaining sufficient copies of this document to enable their personnel to fulfill their responsibilities under a contract with the Department for engineering services.

Prequalified contractors shall be responsible for obtaining sufficient copies of this document for their bidding and contract management purposes. They also shall be responsible for notifying their subcontractors and suppliers about this document.

Additional free copies can be obtained in accordance with the instructions printed on the inside of the front cover.

The 1997 Supplemental Specifications incorporate the 1996 Supplemental Specifications and Interim Supplemental Specification No. 1 to the 1996 Supplemental Specifications. In addition, there are other changes which are explained in the Attachment to this letter.

Sincerely,

Jerry H. Zogg, P.E.
Chief Standards Development Engineer

Page 1 of 6

ATTACHMENT

This attachment highlights those new changes included in the 1997 Supplemental Specifications that were not contained in either the 1996 Supplemental Specifications or Interim No. 1 to the 1996 Supplemental Specifications.

1. Subsection 102.5 Preparation of Proposal. The third sentence of the first paragraph has been revised to allow the contractor to submit a Schedule of Prices which has been generated through the use of computer software supplied by the Department. This allows the contractor another option to the printed Schedule of Prices supplied in the proposal by the Department.

2. Subsection 102.6 Irregular Proposals. The fourth paragraph is revised slightly to be in accord with the new computer program requirements.

3. Subsection 105.3 Conformity with Plans and Specifications. The last paragraph is revised to clarify that the \$ 400 credit will be applied only once to a contract change order, not to each item in the CCO.

4. Subsection 108.7 Determination and Extension of Contract Time for Completion. Phrases have been added to the first paragraph to stress that working day contracts shall be subject to the provisions of Subsection 108.12.2, and calendar day contracts shall be subject to the provisions of Subsection 108.13.1. These changes alert the contractor that the actual number of working days or calendar days which will be allowed before liquidated damages are assessed will be determined under requirements found in the quoted subsections.

5. Subsection 108.8 Liquidated Damages. The table has been revised to be in accord with results of the 1996 survey of daily costs actually incurred by WisDOT in providing administrative and inspection personnel on construction projects.

6. Subsection 109.1.1 General. The second and third paragraphs have been removed and replaced by language which spells out the four exceptions, two of them new, under which the contractor is paid for completed work by other than final measurement of quantities of completed work items. The two new additions relate to (a) situations where plan dimensions have been modified to accommodate a change from the SI Metric System to the U.S. Standard Measure System and (b) situations where products manufactured to the U.S. Standard Measure System are substituted for products manufactured to the SI Metric System. During the transition period to SI Metric, we anticipate that these two situations could occur frequently. When the transition to SI Metric is completed, these specifications will be reviewed for modification.

7. Subsection 401.3.1 General Requirements. The fifth paragraph is revised to show that we will not allow the grade of performance graded asphalts to be changed, because great care has been taken to select the proper grade for Wisconsin using modern testing techniques. Changing the grade could have a detrimental effect on mixture performance and service life. For penetration and viscosity graded asphalts however, we will continue to allow a one-step change in grade.

8. Subsection 402.2 Materials. The second paragraph has been revised to allow the contractor to use any of the five listed asphaltic emulsions unless a particular emulsion is required by contract special provision. This change greatly reduces the need for a special

provision to the contract.

9. Subsection 403.3.3.3 Required Tests for a Contract of Less Than 460 Megagrams of Mixture. This subsection has been revised to state that the QMP item will not be paid for if all QMP testing is waived by the engineer. There has been some confusion about this situation; this change will clear up that confusion.

10. Subsection 403.3.3.4 Required Tests for Temporary Pavements. This subsection has been revised as stated above for Subsection 403.3.3.3.

11. Subsection 403.3.4.2 Control Charts. The requirement to perform gradation tests on the 12.5 mm and 4.75 mm sieves has been dropped. Now the main emphasis when controlling mixes is on air voids and VMA, and gradation is of lesser importance. Gradation data collected on the 9.5 mm, 2.36 mm, 600 micron and 75 micron sieves will be sufficient.

12. Subsection 403.3.5 Control Limits. Values for the 12.5 mm and 4.75 mm sieves have been dropped for the reason stated above for Subsection 403.3.4.2. Also, the tolerances for the 2.36 mm sieve and 600 micron sieve have been increased, which will allow the contractor to produce an acceptable mix with less aggregate waste.

13. Subsection 403.4 Quality Assurance. Allowable differences in the fourth paragraph for the 12.5 mm and 4.75 mm sieves have been dropped. These sieves will no longer be required for mixture control, for the reason stated above for Subsection 403.3.4.2.

14. Subsection 403.7 Basis of Payment. A paragraph is added which states that if all QMP testing is waived then this item will not be measured and paid for. This specification addition reinforces the statements previously made in Subsections 403.3.3.3 and 403.3.3.4.

15. Subsection 407.2.1.1.4 Aggregate Gradation Master Range. Several values in the table have been revised. These changes will allow the contractor to produce satisfactory mixture with less aggregate waste.

16. Subsection 407.2.1.4 Reclaimed Asphaltic Pavement Materials. The last three paragraphs of this subsection have been deleted and incorporated into the new subsection 407.2.1.5 described in the next item.

ATTACHMENT (CONT.)

17. Subsection 407.2.1.5 Recovered Asphaltic Materials. This new subsection has been added to address mix design items that are common to the use of either salvaged asphaltic pavement materials or reclaimed asphaltic pavement materials; and hence, the generic name of recovered asphaltic materials. This new subsection includes the last three paragraphs deleted

from subsection 407.2.1.4, with an added phrase to the current last paragraph of 407.2.1.4 indicating that the specifications in that paragraph apply only to penetration or viscosity graded asphalts. Also, a paragraph is added to establish the allowable grades of performance graded asphalt when salvaged or reclaimed asphaltic materials are used in the mix in varying percentages.

18. Subsection 407.3.1.3 Mixture Design VMA Requirements. This new subsection has been added to bring together and to adjust the VMA requirements for Gradations 1, 2, 3 and 4, and to add VMA minimum values for coarse mixtures and fine mixtures. WisDOT's recent experience with these mixtures has led to this fine tuning.

19. Subsections 407.3.2.1, 407.3.2.2, 407.3.3.1 and 407.3.3.2. The VMA required values in each of these subsections has been deleted. Instead, the VMA requirements are now shown and expanded in new Subsection 407.3.1.3 described above.

20. Subsection 407.7.1 General. A phrase is added to state that the contractor's asphaltic mix design will be incidental to the item of Asphaltic Concrete Pavement, Type HV, MV or LV. This change is needed to clarify that providing the mix design is not paid for under the item of Quality Management Program, Asphaltic Mixture.

21. Subsection 415.5.9.8.2 Profilograph. A new first paragraph tells the contractor that, unless a special provision requiring use of a profilograph is put in the contract, the standard specifications of this subsection shall not apply. This change eliminates the problem of profilograph standard specifications being retained in contracts where they are not wanted, such an area with urban typical sections, manholes, etc.

22. Subsection 415.7.1.1 General. A phrase has been added which in effect states that the furnishing, operation, etc. of a profilograph, if required by special provision, shall be incidental to the item of Concrete Pavement. This change is in accord with the revision to Subsection 415.5.9.8.2 stated above.

23. Subsections 507.2.2.6.1 General and 507.2.3.8 Ammonical Copper Quat, Type D. Subsection 507.2.2.6.1 has been revised to add Ammonical Copper Quat, Type D, as an approved preservative for structural lumber and timber. Subsection 507.2.3.8 is a new subsection setting forth the specifications for this preservative. ACQ has no arsenic in its composition and so can be used for purposes where arsenic is not wanted or not allowed. Its use as a wood preservative has been approved by the American Wood Preservers Assn.

ATTACHMENT (CONT.)

24. Subsections 509.1 Description, 509.4.2 Preparation, 509.5 Method of Measurement, and 509.6.2 Preparation. These subsections have been revised to add specifications for two new items: Preparation, Decks, Type 1 and Type 2. The current item of Preparation, Decks has been retired from use. We feel these added items will better define the individual work

operations, provide the contractor with payment consistent with the labor involved, and lead to better unit prices on bids. Similar items have been used by Minnesota DOT for some years with excellent results.

25. Subsections 614.1 Description, 614.2.3.1 Energy Absorbing Terminal, 614.3.3.1 Energy Absorbing Terminal, 614.4 Method of Measurement, and 614.5 Basis of Payment.

These subsections have been revised or added in order to incorporate specifications for two new items: Steel Plate Beam Guard, Slotted Rail Terminal and Steel Plate Beam Guard, Energy Absorbing Terminal. These systems have been approved by the Federal Highway Administration.

26. Subsection 642.2.1 General. Specifications for the first aid kit and for the emergency washing facilities for workers exposed to harmful materials have been added in two new paragraphs. Both are required by state or federal worker safety rules.

27. Bid Item Schedules; Versions 3 and 4. Several bid items have been added, including:
Concrete Pavement Items, 6 ½ -Inch (165 mm), 7 ½ -Inch (190 mm), 8 ½ -Inch (215 mm), 9 ½ -Inch (240 mm), 10 ½ -Inch (265 mm), and 11 ½ -Inch (290 mm)
HES Concrete Pavement Items, 8 ½ -Inch (215 mm), 9 ½ -Inch (240 mm), 10 ½ -Inch (265 mm), and 11 ½ -Inch (290 mm)
Preparation, Decks, Type 1
Preparation, Decks, Type 2
Manhole Covers, Type J-Special
Inlet Covers, Type HM-GJ
Inlet Covers, Type HM-GJ-S
Steel Plate Beam Guard, Slotted Rail Terminal
Steel Plate Beam Guard, Energy Absorbing Terminal
Pull Boxes, Steel, 24x42-Inch (600 x 1050 mm)
Pull Boxes, Steel, 24X48-Inch (600 x 1200 mm)

The bid item of Preparation, Decks has been retired.

28. Errata. An error in the conversion table, page 751, has been corrected.

For the information of users, the following specifications have been issued, and are effective within the dates shown below:

| | Effective From | |
|------------------------------|----------------|------------------|
| | Letting to | Letting |
| 1996 Standard Specifications | Oct. 96 | Until Superseded |

| | | |
|----------------------------------|---------|------------------|
| 1996 Supplemental Specifications | Oct. 96 | Oct. 97 |
| Interim S.S. No. 1 | Jan. 97 | Oct. 97 |
| 1997 Supplemental Specifications | Oct. 97 | Until Superseded |

WISCONSIN DEPARTMENT OF TRANSPORTATION{PRIVATE }
DIVISION OF TRANSPORTATION INFRASTRUCTURE DEVELOPMENT
BUREAU OF HIGHWAY CONSTRUCTION
STANDARDS DEVELOPMENT SECTION

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PART I

GENERAL REQUIREMENTS AND COVENANTS

101. Definitions and Terms. The following definition is added:

Consulting Firm. The individual, partnership, joint ventures, corporation or agency contracted by the Department to act directly or as a duly authorized construction representative providing services for the Department.

Two definitions are revised to read as follows:

Bidder. Any individual, partnership, joint venture, corporation, limited liability company, limited liability partnership, or a combination of any or all jointly, submitting a proposal (bid) for the work advertised in the invitation for bids, acting directly or through a duly authorized representative.

Contractor. The individual, partnership, joint venturers, corporation, limited liability company, limited liability partnership or agency undertaking the performance of the work under the terms of the contract and acting directly or through a duly authorized representative.

102.5 Preparation of Proposal. The third sentence of the first paragraph is removed and replaced with the following:

The substitute schedule shall be in a format conforming to the Department's guidelines for approval of computer generated Schedule of Prices and must be approved in writing by the Department prior to use, or the substitute schedule shall be in a format generated through use of Department supplied computer software.

The last paragraph is revised to read as follows:

A proposal submitted by an individual shall be signed by the bidder or by a duly authorized agent. A proposal submitted by a partnership or a limited liability partnership shall be signed by a member or by a duly authorized agent thereof. A proposal submitted by a joint venture shall be signed by a member or by a duly authorized agent of at least one of the firms. A proposal submitted by a corporation shall be signed by an authorized officer or duly authorized agent of such corporation, and the proposal shall show the name of the State under the laws of which such corporation was chartered. A proposal submitted by a limited liability company shall be signed by a duly authorized agent of the company. The required signatures shall in all cases appear in the space provided therefor on the proposal. All addenda to the contract shall be attached to the submitted proposal by the bidder.

102.6 Irregular Proposals. The fourth paragraph is revised to read as follows:

If on a computer generated Schedule of Prices the item number is correct and the description is incorrect, then the description will be corrected to reflect the Department's form and line number sequencing.

102.7 Proposal Guaranty. The entire text is removed and replaced by the following:

No proposal will be considered unless accompanied by properly executed bid bond, of not less than five percent of the total bid, **on the Department's form** contained in the proposal, or cashier's check, certified check, bank's check or postal money order in the amount designated on the proposal and payable to the Department. Certified checks shall be drawn on the account of the bidder submitting the proposal.

The bidder may also meet the above requirements by having a properly executed annual bid bond of not less than five percent of the total bid(s) on file with the Department. The annual bid bond shall be on the **form provided by the Department**.

The surety issuing the bid bond must have an equivalent A.M. Best rating of A- or better and be licensed to do business in the State of Wisconsin.

If alternate bids are invited and submitted, the bidder may submit one proposal guaranty in the total amount required for the combined alternate which will also be considered as covering each individual proposal.

102.11 Competency of Bidders. The second paragraph is revised to read as follows:

Any individual, partnership, corporation, joint venture, limited liability company or limited liability partnership desiring to bid on any work under the jurisdiction or management of the Department shall furnish the Department a statement on a form provided by the Department, which statement shall fully develop the financial ability, adequacy of plant, equipment and organization, prior experience and other pertinent and material facts required; certificates for insurance Types 1, 2 and 3 as required by Subsection 107.26 shall be included.

102.12 Disqualification of Bidders. Item 3 is revised to read as follows:

3. More than one proposal for the same work from an individual, partnership, joint venture, corporation, limited liability company or limited liability partnership under the same or different names.

103.1 Consideration of Proposals. The fifth paragraph is removed and replaced by the following:

Proposals will be considered irregular and will be rejected as nonresponsive if any of the unit bid prices are significantly unbalanced to the potential detriment of the Department.

105.3 Conformity with Plans and Specifications. The following changes are made:

The last paragraph is revised to read as follows:

If the engineer determines that noncomplying work or materials may remain in place, the contract change order for the unit price adjustment will include a \$400.00 lump sum credit to the Department for administrative costs, which credit shall cover all items contained in the contract change order.

The following paragraph is added:

If a portion of the work cannot be constructed in accordance with the SI Metric system dimensions and values shown in the plans, specifications or contract provisions, the contractor may construct that portion of the work to essentially equivalent U.S. Standard Measure system dimensions and values, provided written approval of the engineer has been obtained before construction of the work under consideration is started.

106.1 Source of Supply and Quality. The following changes are made:

The eighth, ninth and tenth paragraphs are deleted.

The following text is added:

The contractor may substitute a product manufactured or fabricated to the U.S. Standard Measure system of measurement for a product manufactured or fabricated to the SI Metric system of measurement, provided the following requirements are met:

1. The substitute product shall be manufactured or fabricated from the same material as the original product, and shall comply with the U.S. Standard Measure system version of the specification requirement for the original product.
2. Dimensions of the substitute product shall be essentially equal to dimensions of the original product. Established manufacturing and fabrication tolerances will be permitted except where absolute maximum or minimum dimensions are specified in the contract.

The contractor shall certify to the engineer in writing that the substitute product complies with the above requirements. The contractor shall not furnish the substitute product until the engineer has approved the product substitution in writing. There shall be no credit to the Department or additional payment to the contractor for such substitution.

107.12 Responsibility for Claims. The following changes are made:

The first paragraph is revised to read as follows:

The contractor and the contractor's insurer shall defend, indemnify and save harmless the State, its officers, agents (in this context, agents exclude consulting firms, Wisconsin Counties and Municipalities and their respective officers and employees) and employees, from all suits, actions or claims of any character brought because of any injuries or damages received or sustained by any person, persons or property on account of the operations of the contractor; or on account of or in consequence of any neglect in safeguarding the work, or through use of unacceptable materials in constructing the work; or because of any act or omission, neglect or misconduct of the contractor; or because of any claims or amounts recovered for any infringement by the contractor of patent, trademark or copyright; or from any claims or amounts arising or recovered under the Worker's Compensation Act, relating to the contractor's employees; or any other law, ordinance, order or decree relating to the contractor's operations. So much of the money due the contractor under and by virtue of the contract as shall be considered necessary by the Department for such purposes, may be retained for the use of the State until such suit or suits, action or actions, claim or claims for injuries or damages as aforesaid shall have been settled and suitable evidence to that effect furnished to the Department. The contractor shall also comply with all of the above requirements defending, indemnifying and saving harmless the county, town or municipality in which the improvement is made and each of them separately or jointly and their officers, agents and employees.

The third paragraph is deleted.

107.17.3 Railroad Insurance Requirements. The entire text is removed and replaced by the following:

The contractor shall provide Railroad Protective Insurance coverage, as may be required by the special provisions. The policy shall name as insured parties the railroad which owns the affected right of way and premises plus such other railroads operating on the track by agreement with the owner. Copies of the policy shall be furnished in accordance with requirements of this subsection.

The contractor shall not enter onto the right of way or premises of the railroad for the purpose of doing work under the contract until the policy has been received by the Department.

Railroad Protective Liability. Where the project involves impact to railroad property as noted in the special provisions, the contractor or subcontractor shall maintain the following type and limits of insurance in addition to the types and limits of required insurance set forth in Subsection 107.26. Such required commercial insurance shall remain in force until such time as all work under or incidental to the contract has been completed by the contractor and accepted by the Department.

Type of Insurance

Minimum Limits Required

Railroad Protective Liability Insurance

\$2 Million per occurrence; may be subject to an Annual Aggregate limit of not less than \$6 million.

When this coverage is required, the contractor or subcontractor shall furnish evidence of the required coverage by submitting two copies of the policy to the Department prior to commencing work under the contract. The Department will send one copy to the railroad company.

A 60 day notice of cancellation or material change in coverage will be required. All coverage shall be placed with the insurance companies licensed to do business in the State of Wisconsin that have an A. M. Best rating of A- or better. The Department reserves the right to require other coverage and limits as detailed in the special provisions. The cost of providing the required insurance coverage and limits shall be considered incidental to the contract and no additional or special compensation will be made therefor.

107.25 Archeological and Historical Findings. The entire text is removed and replaced with the following:

Whenever the construction operations encounter human remains, or artifacts believed to be of archeological or historical significance, the contractor shall immediately cease operations at the encounter site and the contractor shall notify the responsible State agency or agencies, as the case may be. The contractor shall comply with directions of the responsible State agency or agencies, and shall cooperate in any necessary moving of construction operations from the site. Work may be continued elsewhere on the project unless otherwise directed by the engineer. Operations at the encounter site shall not resume until allowed by the responsible State agency or agencies.

107.26 Standard Insurance Requirements. This new subsection reads as follows:

The contractor shall maintain the following types and limits of commercial insurance in force until such time as all work under or incidental to the contract has been completed by the contractor and accepted by the Department:

| <u>{PRIVATE }Type of Insurance</u> | <u>Minimum Limits Required*</u> |
|---|---|
| 1. Commercial General Liability Insurance; shall be endorsed to include blanket contractual liability coverage. | \$2 Million Combined Single Limits per Occurrence; may be subject to an Annual Aggregate Limit of not less than \$4 Million. |
| 2. Workers' Compensation and Employers' Liability Insurance. | Workers' Compensation: Statutory Limits Employers' Liability: Bodily Injury by Accident: \$100,000 Each Accident Bodily Injury by Disease: \$500,000 Each Accident |

\$100,000 Each Employee

3. Commercial Automobile Liability Insurance; shall cover all contractor-owned, non-owned, and hired vehicles used in carrying out the contract. \$1 Million-Combined Single Limits Per Occurrence.

*These requirements may be satisfied either through primary insurance coverage or through excess/umbrella policies.

Each bidder shall provide the Department with Certificates of Insurance as evidence that required coverages for Insurance Types 1, 2 and 3 are in force. The certificates shall be provided at the time of prequalification in accordance with requirements of Subsection 102.11.

A 60 day notice of cancellation or material change in coverage will be required. All coverage shall be placed with insurance companies licensed to do business in the State of Wisconsin that have an A.M. Best rating of A- or better. The Department reserves the right to require other coverage and limits as detailed in the special provisions. The cost of providing the required insurance coverage and limits shall be considered incidental to the contract and no additional or special compensation will be made therefor.

The above insurance requirements shall apply with equal force whether the work under the project is performed by the contractor, by a subcontractor or by anyone directly or indirectly employed by either of them.

108.7 Determination and Extension of Contract Time for Completion. The first paragraph is revised to read as follows:

The time for completion of the work contemplated under the contract will be specified in the proposal as a specific number of calendar days including Saturdays, Sundays and holidays, subject to the provisions of Subsection 108.13.1; as a specific number of working days, excluding Sundays, Saturdays, New Year's Day, Martin Luther King Jr. Day, Good Friday, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas Eve Day, Christmas Day, New Year's Eve Day and the period from November 16 through March 31, both dates inclusive, subject to the provisions of Subsection 108.12.2; or as a given calendar date on or before which the work shall be completed. The completion of work within the time as specified is an essential part of the contract.

108.8 Liquidated Damages. The table is revised to read as follows:

| <i>Original Contract Amount</i> | | <i>Daily Charge</i> | |
|---------------------------------|-------------------------|---------------------|--------------------|
| <i>From More Than</i> | <i>To and Including</i> | <i>Calendar Day</i> | <i>Working Day</i> |
| {PRIVATE} \$ 0 | \$ 100,000 | \$ 180.00 | \$ 360.00 |
| 100,000 | 300,000 | 275.00 | 550.00 |

| | | | |
|------------------|------------------|----------------|-----------------|
| <i>300,000</i> | <i>500,000</i> | <i>470.00</i> | <i>940.00</i> |
| <i>500,000</i> | <i>1,000,000</i> | <i>685.00</i> | <i>1,370.00</i> |
| <i>1,000,000</i> | <i>-</i> | <i>1050.00</i> | <i>2,100.00</i> |

109.1.1 General. The second and third paragraphs are removed and replaced by the following text:

The completed work will be measured for final payment by the engineer, as specified for the various items elsewhere in the standard specifications, to determine the quantities of such items of work performed, and the contractor will be paid for the actual amount of work performed in accordance with the contract, as shown by the final measurements, with the following exceptions:

1. An agreement has been made to compensate the contractor on the basis of plan quantity.

If the contractor and the engineer agree in writing the quantities of certain items or portions of items of work as set forth in the contract or on the plans, as originally drawn or subsequently corrected or revised, are in substantial agreement with actual quantities of work performed, compensation will be made based on the quantities set forth in the contract or on the plans, as originally drawn or subsequently corrected or revised, without measurement, and the contractor shall accept such compensation as full payment for such items, or portions of items, in accordance with the provisions of Subsection 109.2.

2. Contract change orders have been executed providing for methods of measurement other than provided elsewhere in the standard specifications for the various items.

The quantities of work measured for final payment will be determined by using the methods of measurement applicable to the various items as a result of the contract change orders.

3. Plan dimension modifications have been requested by the contractor to accommodate a change from the SI Metric System to the U.S. Standard Measure System and have been approved by the engineer.

The quantities to be measured for final payment will be the quantities of the various items actually constructed under the modified plan dimensions, or the quantities of the various items derived from the original plan dimensions, whichever is less.

4. Substitution of an item manufactured to the U.S. Standard Measure System for an item manufactured to the SI Metric System has been done in accordance with requirements of Subsection 106.1.

The quantity measured for final payment will be the quantity actually furnished and constructed.

PART II

EARTHWORK

204.2.2 Abandoning Pipes and Structures. The first sentence of the 12th paragraph is revised to read as follows:

Chips in the 6 mm to 10 mm range shall be used for sealing wells of 100 mm diameter, and chips in the 10 mm to 20 mm range shall be used for sealing wells larger than 100 mm diameter.

206.3.13 Disposal of Excavated Material. The first paragraph is revised to read as follows:

Excavated material suitable for use as riprap may be so placed if such use is appropriate. Excavated material not used as riprap and suitable for backfilling may be so utilized. Excavated material not used for riprap or backfilling and suitable for the construction of embankments shall be used therefor in accordance with the requirements for Roadway and Drainage Excavation and Embankments, provided the contract contains a bid item of Common Excavation, Unclassified Excavation or Borrow Excavation, and there is a need for such excavated material in the embankment at the time of disposal. Payment for the excavated material used in the embankment construction will be at the contract unit price for Borrow Excavation. In the absence of a Borrow Excavation item in the original contract, payment will be made at the contract unit price for Common Excavation or Unclassified Excavation, as the case may be. The quantity of excavated material used in the embankment construction shall be determined in accordance with Subsection 205.5.1. Overhaul will not be allowed for excavated material placed in embankments.

PART III

BASE COURSES

304.1 Description. The following changes are made:

The seventh paragraph is deleted.

The eighth paragraph is revised to read as follows:

Salvaged Asphaltic Pavement, Base Course, shall consist of the necessary processing of the stockpile, loading, hauling and placing salvaged asphaltic pavement as base course, at the locations shown on the plans or as directed by the engineer, in accordance with the specifications.

304.2.3.1 Asphaltic Pavement, Base Course. The following changes are made:

The title and text are deleted. The subsection heading is revised to read: 304.2.3.1 (Blank).

304.2.3.2 Salvaged Asphaltic Pavement, Base Course. This subsection is revised to read as follows:

Stockpiled salvaged asphaltic pavement material to be combined with virgin aggregate conforming to Gradation No. 1 (Subsection 304.2.6) shall be processed as necessary so 100 percent will pass a 37.5 mm sieve.

Stockpiled salvaged asphaltic pavement material to be combined with virgin aggregate conforming to Gradation No. 2 or No. 3 (Subsection 304.2.6) shall be processed as necessary so 100 percent will pass a 25.0 mm sieve.

Other requirements of Subsection 304.2 shall not apply.

304.9.1 General. The first paragraph is revised to read as follows:

The items of Crushed Aggregate Base Course; Crushed Aggregate Base Course, Detours; Salvaged Crushed Aggregate Base Course; Producing and Stockpiling Crushed Aggregate Base Course; Hauling and Placing Crushed Aggregate Base Course; Crushed Aggregate Base Course, Open Graded Number (-); and Salvaged Asphaltic Pavement, Base Course will each be measured as provided in the contract by the megagram, or in the vehicle by the cubic meter. The quantity to be measured for payment shall be the amount of material required and incorporated in the work or placed in stockpiles in accordance with the contract.

304.10 Basis of Payment. The following changes are made:

The sixth paragraph is deleted.

The seventh paragraph is revised to read as follows:

The quantity of aggregate for the item of Salvaged Asphaltic Pavement, Base Course, measured as provided above, will be paid for at the contract unit price per megagram or per cubic meter, which price shall be full compensation for the necessary processing of the stockpile, loading, hauling, placing and compacting; for maintaining; for preparing foundation; and for furnishing all labor, tools, equipment and incidentals necessary to complete the work.

306.7.1 Asphaltic Base Course. The first paragraph is revised to read as follows:

The quantity of Asphaltic Base Course, measured as provided above, will be paid for at the contract unit price per megagram. This price shall be full compensation for furnishing all materials, except asphaltic materials; for preparing, mixing, hauling, placing and compacting; for preparing foundation, unless otherwise provided; and for all labor, tools, equipment and incidentals, including maintenance until acceptance, necessary to complete the work.

306.7.2 Asphaltic Base Course Widening. The first paragraph is revised to read as follows:

The quantity of Asphaltic Base Course Widening, measured as provided above, will be paid for at the contract unit price per megagram, which price shall be full compensation for all excavation, reconstructing earth shoulders, satisfactory disposal of surplus or unsuitable excavated material; for the preparation and compaction of the foundation; for furnishing, preparing, handling, placing and consolidating the asphaltic mixture; for furnishing all materials, except asphaltic materials; and for all labor, tools, equipment and incidentals necessary to satisfactorily complete the work.

PART IV

PAVEMENTS

401.3.1 General Requirements. The fifth paragraph is revised to read as follows:

The grade of penetration graded or viscosity graded asphaltic materials, including asphalt emulsions used for tack coat, may be changed by the contractor one step at no change in unit price when permitted by the engineer in writing. No change in the grade of performance graded asphaltic materials will be permitted.

401.3.4 Asphalt, Type AC. The following text is added:

Requirements for asphalt cements graded by performance shall be as shown in the following Table:

Notes to the Table:

- a. Pavement temperatures can be estimated from air temperatures using an algorithm contained in the Superpave^{IM} software program or may be provided by the specifying agency, or by following the procedures as outlined in AASHTO Document PPX.
- b. This requirement may be waived at the discretion of the specifying agency if the supplier warrants that the asphalt cement can be adequately pumped and mixed at temperatures that meet all applicable safety standards.
- c. For quality control of unmodified asphalt cement production, measurement of the viscosity of the original asphalt cement may be substituted for dynamic shear measurements of $G'/\sin \delta$ at test temperatures where the asphalt is a Newtonian fluid. Any suitable standard means of viscosity measurement may be used, including capillary or rotational viscometer (AASHTO T 201 or T 202).
- d. The PAV aging temperature is based on simulated climatic conditions and is one of three temperatures 90 C, 100 C or 110 C. The PAV aging temperature is 100 C for PG 64- and above, except in desert climates, where it is 110 C.
- e. Physical Hardening - TP 1 is performed on a set of asphalt beams according to Section 13.1 of TP 1, except the conditioning time is extended to 24 hrs \pm 10 minutes at 10 C above the minimum performance temperature. The 24-hour stiffness and m-value are reported for information purposes only.
- f. If the creep stiffness is below 300 MPa, the direct tension test is not required. If the creep stiffness is between 300 and 600 MPa the direct tension failure strain requirement can be used in lieu of the creep stiffness requirement. The m-value requirement must be satisfied in both cases.

CHART

402.2 Materials. The second paragraph is revised to read as follows:

Asphaltic material shall be MS-2, SS-1, SS-1h, CSS-1 or CSS-1h, Emulsified Asphalt, unless otherwise specified in the contract.

403.3.3.3 Required Tests for a Contract of Less Than 460 Megagrams of Mixture.

The following changes are made:

The subsection number is corrected.

This subsection is revised to read as follows:

All testing may be waived, by the engineer. If all testing is waived, the item of Quality Management Program, Asphaltic Mixture will not be measured and paid for.

403.3.3.4 Required Tests for Temporary Pavements. This subsection is revised to read as follows:

Temporary pavements are defined as those pavements which will be placed and removed before the completion of the contract. All testing may be waived by the engineer.

If all testing is waived, the item of Quality Management Program, Asphaltic Mixture will not be measured and paid for.

403.3.4.2 Control Charts. The third paragraph is revised to read as follows:

The following data shall be recorded on the standardized control charts:

Blended Aggregate Gradation Tests (Sieves - Percent passing)
9.5 mm, 2.36 mm, 600 µm, 75 µm

Asphalt Content, percent

Marshall Bulk Specific Gravity

Maximum Specific Gravity

Air Voids, percent

Voids Mineral Aggregate, percent

403.3.5 Control Limits. This subsection is revised to read as follows:

The following control limits for the Job Mix Formula and warning limits are based on a running average of the last four data points:

| <u>Item</u> | <u>Job Mix Formula Limits</u> | <u>Warning Limits</u> |
|----------------------------------|-------------------------------|-----------------------|
| <i>Sieve - percent Passing</i> | | |
| 9.5 mm | ± 5.5 | ± 4.0 |
| 2.36 mm | ± 5.0 | ± 4.0 |
| 600 µm | ± 4.5 | ± 3.5 |
| 75 µm ± 2.0 | ± 1.5 | |
| Asphalt Content, percent | ± 0.4 | ± 0.3 |
| Air Voids, percent | ± 1.3 | ± 1.0 |
| Voids Mineral Aggregate, percent | - 1.5 | - 1.2 |

403.4 Quality Assurance. The fourth paragraph is revised to read as follows:

Differences between the contractor's and engineer's split sample test results will be considered acceptable if within the following limits:

| <u>Item</u> | <u>Allowable Differences</u> |
|--------------------------------|------------------------------|
| <i>Sieve - percent Passing</i> | |
| 9.5 mm | 6.0 |
| 2.36 mm | 4.0 |
| 600 µm | 3.5 |
| 75 µm | 2.0 |
| Marshall Bulk | 0.030 |
| Specific Gravity | |
| Maximum | 0.020 |
| Specific Gravity | |

403.7 Basis of Payment. The following paragraph is added:

If all testing is waived in accordance with provisions of Subsections 403.3.3.3 and 403.3.3.4, the item of Quality Management Program, Asphaltic Mixture will not be measured and paid for.

407.2.1.1.4 Aggregate Gradation Master Range. This subsection is revised to read as follows:

The aggregates, including mineral filler when required, shall conform to the following gradation requirements.

The gradation values listed are the extreme limits for design purposes. Production testing tolerances may allow mixture production values that exceed the aggregate master range.

| <i>Gradation*</i> | | | | |
|-------------------------|--------|--------|--------|--------|
| {PRIVATE }Sieve Size | 1 | 2 | 3 | 4 |
| | 100 | -- | -- | -- |
| 37.5 mm | 90-100 | 100 | -- | -- |
| 25.0 mm | 55-95 | 90-100 | 100 | -- |
| 19.0 mm | -- | 45-95 | 90-100 | 100 |
| 12.5 mm | -- | -- | 35-95 | 90-100 |
| 9.5 mm | 15-65 | 20-70 | 25-80 | 30-85 |
| 4.75 mm | 10-50 | 10-55 | 15-60 | 20-65 |
| 2.36 mm | 7-30 | 7-40 | 7-40 | 7-45 |
| 600 µm | 5-20 | 5-25 | 5-25 | 5-30 |
| 300 µm | 3-8 | 3-8 | 3-8 | 3-8 |
| 75 µm | | | | |

* Percent passing of total aggregate mass.

407.2.1.3 Salvaged Asphaltic Pavement Materials. The following two paragraphs are added:

The contractor shall process the salvaged asphaltic pavement stockpile as necessary to permit incorporation in the asphaltic pavement or base.

The area to be covered by processed stockpiled material shall be cleared and prepared to facilitate recovery of the maximum amount of the stockpiled material. The area on which the processed salvaged asphaltic pavement material is stockpiled shall be free of all clods, lumps or stones exceeding 50 mm.

407.2.1.4 Reclaimed Asphaltic Pavement Materials. The following changes are made:

The second, third, and fourth paragraphs are deleted.

407.2.1.5 Recovered Asphaltic Materials. This new subsection reads as follows:

The percentage of asphaltic materials from either salvaged asphaltic pavement or reclaimed asphaltic pavement (RAP) shall be established for the mixture design according to AASHTO T 164 using the appropriate dust correction procedure.

When test results indicate that a change has occurred in the salvaged or reclaimed asphaltic material percentage, a change in the design percentage of salvaged or reclaimed asphaltic material may be requested by the contractor or the Department. The request shall include at least two recent salvaged or reclaimed asphaltic pavement extractions from the contractor's mixture design laboratory.

When penetration graded or viscosity graded asphaltic materials are specified in the contract, the blend of new asphaltic material with the extracted asphaltic material from either salvaged asphaltic pavement or RAP shall meet the penetration or viscosity requirements for the originally specified asphaltic materials. The new asphaltic material shall not be more than two standard asphaltic material grades softer than the specified asphaltic material.

When performance graded (PG) asphaltic materials are specified in the contract, salvaged or reclaimed asphaltic pavement materials may be incorporated into the asphaltic mixture in amounts up to 25% for lower layers and 20% for upper layers without a change in PG grade. If greater amounts of salvaged or reclaimed asphaltic pavement materials are incorporated into the asphaltic mixture, the added asphaltic material shall be one PG grade lower, unless contractor or supplier testing indicates that the resultant blend meets the PG grade originally specified in the contract.

407.2.2.1.1 Definitions. Under the definition for Manufactured Sand, the second paragraph is deleted.

407.2.2.2 Asphaltic Materials. The text is revised to read as follows:

The virgin or resultant blended asphaltic material shall be as designated in the contract.

407.3.1.3 Mixture Design VMA Requirements. This new subsection reads as follows:

Values in the following table shall apply to lower and upper layers of Asphaltic Concrete Pavement, Types HV, MV and LV, as appropriate.

| <u>Mixture Design VMA Requirements, Minimum Percent</u> | | | |
|---|----------------------------|------------------------------------|----------------------------------|
| {PRIVATE }Gradation | % Passing 2.36 mm Sieve | Coarse Mixture VMA, Min Percent | Fine Mixture VMA, Min Percent |
| | 25.0 | 12.0 | 13.0 |
| 1 | 30.0 | 12.5 | 13.5 |
| 2 | 35.0 | 14.5 | 15.0 |
| 3 | 40.0 | 15.0 | 15.5 |
| 4 | | | |

Coarse Mixture - Mix with a JMF percent passing the 2.36 mm sieve less than or equal to the value shown in the above table.

Fine Mixture - Mix with a JMF percent passing the 2.36 mm sieve greater than the value shown on the above table.

407.3.2 Asphaltic Concrete Pavement, Type HV. Subsections 407.3.2.1 and 407.3.2.2 are revised to read as follows:

407.3.2.1 Lower Layer. Gradation 2 (Subsection 407.2.1.1.4) shall be used unless otherwise designated in the contract.

Mixtures made in the design laboratory with aggregates and asphalt cement proposed for the work shall have the following properties:

| | <u>Gradation 1</u> | <u>Gradation 2</u> |
|--|--------------------|--------------------|
| No. blows/end | 75 | 75 |
| Stability, min., kN | 6500 | 6500 |
| Flow, 0.25 mm | 8-16 | 8-16 |
| Air Voids, percent | 4.0 | 4.0 |
| Percent Passing 75 µm Sieve/ Asphalt Cement Ratio | 0.6-1.2 | 0.6-1.2 |
| Tensile Strength Ratio, min, percent | | |
| No additive | 70.0 | 70.0 |
| With additive | 75.0 | 75.0 |

407.3.2.2 Upper Layer. Gradation 3 (Subsection 407.2.1.1.4) shall be used unless otherwise designated in the contract.

Mixtures made in the design laboratory with aggregates and asphalt cement proposed for the work shall have the following properties:

| | <u>Gradation 3</u> | <u>Gradation 4</u> |
|--|--------------------|--------------------|
| No. blows/end | 75 | 75 |
| Stability, min., kN | 6500 | 6500 |
| Flow, 0.25 mm | 8-16 | 8-16 |
| Air Voids, percent | 4.0 | 4.0 |
| Percent Passing 75 µm sieve/ Asphalt Cement Ratio | 0.6-1.2 | 0.6-1.2 |
| Tensile Strength Ratio, min. percent | | |
| No Additive | 70.0 | 70.0 |
| With Additive | 75.0 | 75.0 |

407.3.3 Asphaltic Concrete Pavement, Type MV. Subsections 407.3.3.1 and 407.3.3.2 are revised to read as follows:

407.3.3.1 Lower Layer. Gradation 2 (Subsection 407.2.1.1.4) shall be used unless otherwise designated in the contract.

Mixtures made in the design laboratory with aggregates and asphalt cement proposed for the work shall have the following properties:

| | <u>Gradation 1</u> | <u>Gradation 2</u> |
|---|--------------------|--------------------|
| No. blows/end | 50 | 50 |
| Stability, min., kN | 5300 | 5300 |
| Flow, 0.25 mm | 8-18 | 8-18 |
| Air Voids, percent | 3.5 | 3.5 |
| Percent Passing 75 μ m Sieve/ Asphalt Cement Ratio | 0.6-1.2 | 0.6-1.2 |
| Tensile Strength Ratio, min., percent | | |
| No additive | 70.0 | 70.0 |
| With additive | 75.0 | 75.0 |

407.3.3.2 Upper Layer. Gradation 3 (Subsection 407.2.1.1.4) shall be used unless otherwise designated in the contract.

Mixtures made in the design laboratory with aggregates and asphalt cement proposed for the work shall have the following properties:

| | <u>Gradation 3</u> | <u>Gradation 4</u> |
|---|--------------------|--------------------|
| No. blows/end | 50 | 50 |
| Stability, min., kN | 5300 | 5300 |
| Flow, 0.25 mm | 8-18 | 8-16 |
| Air Voids, percent | 3.5 | 3.5 |
| Percent passing 75 μ m Sieve/ Asphalt Cement Ratio | 0.6-1.2 | 0.6-1.2 |
| Tensile Strength Ratio, min., percent | | |
| No additive | 70.0 | 70.0 |
| With additive | 75.0 | 75.0 |

407.7.1 General. The second paragraph is revised to read as follows:

This price shall be full compensation for providing an asphaltic mixture design; for furnishing, preparing, hauling, mixing and placing of all materials, except asphaltic materials; for

compacting mixtures; for preparing foundation, unless otherwise provided; and for all labor, tools, equipment and incidentals, including maintenance, necessary to complete the work.

410.1 Description. The first paragraph is revised to read as follows:

Salvaged Asphaltic Pavement shall consist of the complete removal of existing asphaltic surfacing at the locations required by the contract or as directed by the engineer, together with hauling and stockpiling of the salvaged material.

410.3.1 Salvaged Asphaltic Pavement. The following changes are made:

The first paragraph in the Standard Specifications is revised to read as follows:

The existing asphaltic pavement shall be removed in its entirety, taking all practical care to avoid incorporation of or damage to the underlying materials. Inclusion of excessive amounts of underlying materials or of aggregates from shoulders shall be cause for immediate suspension of the work until corrective procedures are instituted. The asphaltic pavement thus removed shall be stockpiled at a location which will permit incorporation in the asphaltic base, asphaltic pavement or salvaged asphaltic pavement, base course.

The third and fourth paragraphs are deleted.

410.3.2 Salvaged Asphaltic Pavement, Milling. The following changes are made:

The third, sixth and seventh paragraphs are deleted.

410.5 Basis of Payment. This subsection is revised to read as follows:

Salvaged Asphaltic Pavement, measured as provided above, will be paid for at the contract unit price per megagram, or per square meter, as the case may be, which price shall be full compensation for removing, hauling, and stockpiling; and for furnishing all labor, equipment, tools and incidentals necessary to complete the work.

Salvaged Asphaltic Pavement, Milling, measured as provided above, will be paid for at the contract unit price per megagram, or per square meter, as the case may be, which price shall be full compensation for removal by milling, hauling, and stockpiling, and for furnishing all labor, equipment, tools and incidentals necessary to complete the work.

SECTION 411. ASPHALTIC SURFACE. This new section reads as follows:

411.1 Description. The item of Asphaltic Surface shall consist of the construction of a plant mixed asphaltic surface on the approved prepared foundation, base course or existing

surface in accordance with the specifications and in reasonably close conformity with the lines, grades, thicknesses and typical cross sections shown on the plans and as directed by the engineer.

Asphaltic Surface, Detours shall consist of furnishing and placing an asphaltic surface conforming to the above requirements at various locations and depths on the detour route, as shown on the plans and as directed by the engineer.

Asphaltic Surface, Patching shall consist of furnishing and placing an asphaltic surface conforming to the above requirements at various patching locations and depths as directed by the engineer.

Asphaltic Surface, Safety Islands shall consist of furnishing and placing an asphaltic surface at the safety island locations and depths, as shown on the plans or as directed by the engineer.

Asphaltic Surface, Driveways and Field Entrances shall consist of furnishing and placing an asphaltic surface at the various driveway and field entrance locations and depths, as shown on the plans or as directed by the engineer.

Asphaltic Surface, Temporary shall consist of furnishing and placing a temporary asphaltic surface at the locations and depths as shown on the plans or as directed by the engineer.

411.2 Materials. The requirements of Section 401 shall not apply to this work except as required in Section 407 for the production of Type LV or Type MV Asphaltic Concrete Pavement mixtures.

411.3 Composition of Mixture. The asphaltic mixture for the items of Asphaltic Surface; Asphaltic Surface, Detours; and Asphaltic Surface, Patching shall meet the requirements for either Type LV or Type MV Asphaltic Concrete Pavement as specified in Section 407.

The asphaltic mixture for the items of Asphaltic Surface, Safety Islands; Asphaltic Surface, Driveways and Field Entrances; and Asphaltic Surface, Temporary shall consist of an intimate mixture of coarse and fine mineral aggregates, with or without salvaged or reclaimed asphaltic pavement materials, uniformly coated and mixed with a Type AC asphaltic material in a suitable mixing plant.

411.4 Construction Methods.

411.4.1 General. The requirements of Section 403 shall not apply to this work. The requirements of Section 405 shall not apply to this work except as hereinafter specified.

The mixture for the items of Asphaltic Surface, Safety Islands and Asphaltic Surface, Patching may be placed by hand methods described in Subsection 405.3.9.

411.4.2 Compaction. Compaction for the items of Asphaltic Surface; Asphaltic Surface, Detours; Asphaltic Surface, Patching; Asphaltic Surface, Driveways and Field Entrances; and Asphaltic Surface, Temporary shall be accomplished by the Ordinary Compaction Procedure as described in Subsection 405.3.10.2.

Compaction for the item of Asphaltic Surface, Safety Islands shall be accomplished to the extent directed by the engineer.

411.4.3 Surface Requirements. The surface produced under the items of Asphaltic Surface; Asphaltic Surface, Detours; and Asphaltic Surface, Temporary shall be tested with a 3 m straightedge and shall show no variation greater than 6 mm from the testing edge of the straightedge between any two contracts with the surface. All humps and depressions exceeding the specified tolerance shall be corrected by removing defective work and replacing it with new material or by other methods of repair approved by the engineer.

The surface produced under the items of Asphaltic Surface, Patching; Asphaltic Surface, Safety Islands; and Asphaltic Surface, Driveways and Field Entrances shall be smooth and contoured as directed by the engineer.

411.5 Maintenance. The contractor shall be responsible for maintaining the asphaltic surface produced under the item of Asphaltic Surface, Temporary. Maintenance shall be done at no additional cost to the Department and shall be done to the satisfaction of the engineer for the time period specified in the contract. Maintenance furnished by the contractor shall include all labor, materials, equipment, tools and incidentals needed to accomplish the work.

411.6 Method of Measurement. All items of work described in Subsection 411.1 will be measured by the megagram as provided in Subsection 405.4.

Asphaltic materials required for and incorporated in the mixture will not be measured separately for payment.

411.7 Basis of Payment. The items of Asphaltic Surface; Asphaltic Surface, Detours; Asphaltic Surface, Patching; Asphaltic Surface, Safety Islands; and Asphaltic Surface, Driveways and Field Entrances, measured as provided above, will be paid for at the contract unit price per megagram, which price shall be full compensation for furnishing, preparing, hauling, mixing and placing of all materials, including asphaltic material and any salvaged or reclaimed asphaltic pavement materials; for compacting the mixture; for preparing the foundation; and for all labor, tools, equipment and incidentals necessary to complete the work.

The item of Asphaltic Surface, Temporary, measured as provided above, will be paid for at the contract unit price per megagram, which price shall be full compensation for furnishing, preparing, hauling, mixing and placing all materials, including asphaltic material and any salvaged or reclaimed asphaltic pavement materials; for compacting the mixture; for preparing the foundation; for maintenance during the time period specified in the contract; and for all labor, tools, equipment and incidentals necessary to complete the work.

415.5.9.8.2 Profilograph. The following text is inserted as the first paragraph:

The provisions of this subsection shall be applicable to the work when required by special provision in the contract.

415.7.1.1 General. This subsection is revised to read as follows:

Except as otherwise provided hereinafter for pavement with a thickness deficiency over 6.4 mm, the quantity completed and accepted, measured as provided above, will be paid for at the contract unit price per square meter for Concrete Pavement, which price shall be full compensation for furnishing, hauling, preparing, placing, curing and protecting of all materials, including cement, concrete masonry, joints and joint materials, dowels and tie bars, unless otherwise provided; for preparing foundation, unless otherwise provided; for filling core holes; for furnishing, operating, maintaining and repairing a profilograph, performing profilograph testing of the pavement surface, providing all special traffic control required for profilograph testing, and performing all necessary corrective actions and corrective work associated with profilograph testing, all if required by special provision in the contract; and for all labor, equipment, tools and incidentals necessary for constructing the pavement complete, exclusive of reinforcement.

PART V

STRUCTURES

501.3.6.3.6 Size Requirements. The last two paragraphs are deleted.

502.7.6 Protective Surface Treatment. The entire text is removed and replaced by the following:

Protective surface treatment will be measured in square meters. The quantity measured for payment shall be the actual area of bridge deck and appurtenances treated in accordance with the contract.

502.8.6 Protective Surface Treatment. The entire text is removed and replaced by the following:

This item, measured as provided above, will be paid for at the contract unit price per square meter for Protective Surface Treatment. Such payment shall be payment in full for furnishing and applying all materials, for preparing and cleaning all surfaces, and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work in accordance with the contract.

503.3.2.2.1 Steam Curing. The third paragraph is revised to read as follows:

The temperature within the enclosure during the curing period shall be maintained between 10 C and 71 C. The temperature adjacent to the concrete in different locations within the housing shall not vary more than 12 C at any one time.

505.2.5 Welded Steel Wire Fabric for Concrete Reinforcement. This new subsection reads as follows:

Welded steel wire fabric for concrete reinforcement shall conform to AASHTO M 55M. The mass and design of the fabric shall be as shown on the plans.

505.2.6 Dowel Bars and Tie Bars. The following paragraph is added:

The coating applicator must have an Epoxy Coating Plant Certification by the Concrete Reinforcing Steel Institute.

505.3.3 Splicing. The following paragraph is added:

Sheets of welded steel wire fabric shall overlap each other sufficiently to maintain a uniform strength and shall be securely fastened at the ends and edges. The edge lap shall be not less than one mesh in width.

507.2.2.6.1 General. The following changes are made:

The third paragraph is revised to read as follows:

Unless otherwise specifically provided in the contract, the preservative treatment of structural lumber and timber shall be with one of the following: creosote- coal tar solution, a pentachlorophenol solution in petroleum solvent, a chromated copper arsenate solution, an ammoniacal copper arsenate solution, an ammoniacal copper zinc arsenate solution, a copper naphthenate solution, or an ammoniacal copper quat solution, except that Coastal Douglas Fir shall not be treated with chromated copper arsenate or ammoniacal copper quat, and Hem-Fir shall not be treated with copper naphthenate.

The following paragraph is added:

The ammoniacal copper quat solution shall conform to the requirements specified under Subsection 507.2.3.8.

507.2.3.8 Ammoniacal Copper Quat. This new subsection reads as follows:

Ammoniacal copper quat solution used in the preservative treatment of lumber and timber shall conform to Type D, as specified in AWWA P5.

509.1 Description. The third paragraph is revised to read as follows:

The items of Preparation, Decks, Type 1; Preparation, Decks, Type 2; and Preparation, Approaches shall consist of the removal of all asphaltic patches and unsound or disintegrated areas of concrete decks and approach pavements as shown on the plans or as directed by the engineer.

509.4.2 Preparation. The following text is inserted as the second and third paragraphs:

Under the item of Preparation, Decks, Type 1, existing asphaltic patching and unsound bridge deck concrete shall be removed only to that depth which will expose one-half of the peripheral area of the top or bottom bar steel in the top mat of reinforcement.

Under the item of Preparation, Decks, Type 2, existing unsound bridge deck concrete shall be removed below the limit of the Type 1 removal described above. The minimum depth of Type 2 removal shall be 25 mm below the bottom of the top or bottom bar steel in the top mat of reinforcement. Further removal shall be as directed by the engineer.

509.5 Method of Measurement. The second paragraph is revised to read as follows:

Preparation, Decks, Type 1 will be measured by area in square meters of work done in accordance with requirements for Type 1 bridge deck preparation, completed and accepted. Preparation, Decks, Type 2 will be measured by area in square meters of work done in accordance with requirements for Type 2 bridge deck preparation, completed and accepted. Preparation, Approaches will be measured by area in square meters of work done in accordance with requirements for approach pavement preparation, completed and accepted. Areas of Type 2 removal will not be subtracted from areas of Type 1 removal. Areas of Joint Repair and Full Depth Deck Repair will not be measured under these items.

509.6.2 Preparation. This subsection is revised to read as follows:

The quantity, measured as provided above, will be paid for at the contract unit price per square meter for Preparation, Decks, Type 1, Preparation, Decks, Type 2 or Preparation, Approaches, as the case may be, which price shall be payment in full for removing asphaltic patches and unsound concrete; for disposal of waste materials; and for furnishing all equipment, tools, labor and incidentals necessary to complete the work in accordance with the contract.

520.3.3 Laying Pipe. The following text is added as the fourth paragraph:

At the contractor's option, sealers meeting the requirements of Subsections 607.2.3, 607.2.4, 607.2.5 or 607.2.6 may be used instead of the geotextile fabric joint wrap. Construction methods for sealing the joints with these sealers shall comply with Subsection 607.3.4. There shall be no additional compensation to the contractor for using sealers instead of geotextile fabric.

PART VI

INCIDENTAL CONSTRUCTION

614.1 Description. The first paragraph is revised to read as follows:

This work shall consist of the construction of cable guard fence, steel plate beam guard, steel thrie beam structure approach, anchorages, terminal ends, crash cushions including replacement cartridges, impact attenuators and marker posts; the construction and removal of temporary steel plate beam guard and anchorages; the salvaging of guard fence; and the adjusting of steel plate beam guard; all at the locations and in accordance with the design and details indicated on the plans and provided by the contract.

The following two paragraphs are added:

Steel Plate Beam Guard, Slotted Rail Terminal, shall consist of furnishing and installing slotted rail terminal ends for Steel Plate Beam Guard.

Steel Plate Beam Guard, Energy Absorbing Terminal, shall consist of furnishing and installing energy absorbing terminal ends for Steel Plate Beam Guard.

614.2.3.1 Energy Absorbing Terminal. This new subsection reads as follows:

Materials furnished for use in energy absorbing terminals for steel plate beam guard shall conform to the manufacturer's specifications.

614.3.3.1 Energy Absorbing Terminal. This new subsection reads as follows:

Energy absorbing terminals for steel plate beam guard shall be installed in accordance with the manufacturer's instructions, the plans and pertinent parts of these specifications.

614.4 Method of Measurement. The fourth paragraph is revised to read as follows:

Marker Posts; Marker Posts for Right of Way; Anchorages for Cable Guard Fence; Anchorages for Steel Plate Beam Guard; Anchorages for Temporary Steel Plate Beam Guard; Anchor Assemblies for Steel Plate Beam Guard; Impact Attenuators; Steel Plate Beam Guard, Slotted Rail Terminal; and Steel Plate Beam Guard, Energy Absorbing Terminal, will each be measured complete in place as units.

614.5 Basis of Payment. The following two paragraphs are added:

Steel Plate Beam Guard, Slotted Rail Terminal, measured as provided above, will each be paid for at the contract unit price, which price shall be payment in full for furnishing and installing all materials required under this system; for setting and driving of posts; for all

excavation, backfilling and disposal of surplus material; and for all labor, tools, equipment and incidentals necessary to complete the work.

Steel Plate Beam Guard, Energy Absorbing Rail Terminal, measured as provided above, will each be paid for at the contract unit price, which price shall be payment in full for furnishing and installing all materials required under the selected system; for setting and driving of posts; for all excavation, backfilling and disposal of surplus material; and for all labor, tools, equipment and incidentals necessary to complete the work.

620.1 Description. This subsection is revised to read as follows:

The item of Concrete Corrugated Median shall consist of the construction of concrete corrugated median including nose section, placed in one course on a prepared foundation, at the locations and in reasonably close conformity with the design, dimensions, lines and grades; all as shown on the plans and provided in the contract.

The item of Concrete Median Blunt Nose shall consist of construction of a blunt concrete median nose section only, at the locations and to the design shown on the plans.

The item of Concrete Median Sloped Nose shall consist of construction of a sloped concrete median nose section only, at the locations and to the design shown on the plans.

620.4 Method of Measurement. This subsection is revised to read as follows:

The item of Concrete Corrugated Median will be measured by area in square meters in place, including the nose section, completed and accepted in accordance with the requirements of the plan and contract.

The items of Concrete Median Blunt Nose and Concrete Median Sloped Nose will be measured by area in square meters in place, completed and accepted in accordance with the requirements of the plan and contract.

620.5 Basis of Payment. This subsection is revised to read as follows:

The quantity of concrete corrugated median including nose section, measured as provided above, will be paid for at the contract unit price per square meter for Concrete Corrugated Median, and the quantity of concrete median nose only, measured as provided above, will be paid for at the contract unit price per square meter for Concrete Median Blunt Nose or Concrete Median Sloped Nose, as the case may be; which price shall be payment in full for preparation of foundation, for furnishing all materials, including concrete masonry, joint filler and tie bars; for hauling, placing, consolidating, shaping, finishing, curing and protecting the concrete; for disposal of surplus materials; and for furnishing all labor, tools, equipment and incidentals necessary to complete the work.

628.3.2 Erosion Mat. The following paragraph is added:

Type Urban erosion mat shall not be overlapped with Type Urban or other type erosion mat.

642.2.1 General. The following two paragraphs are added:

A first aid kit shall be supplied by the contractor in each field office and field laboratory provided under the contract. The kits shall be readily accessible to project personnel. The contents of each kit shall be checked at least once each week and expended items shall be replenished. Each kit shall contain, at a minimum, a supply of latex or nitrile gloves, CPR masks, adhesive tape, pressure and cling bandages, antiseptic wipes, bite/sting swabs, cold packs, and safety goggles.

In situations where the eyes or body of a worker may be exposed to corrosive or potentially harmful materials, the contractor shall provide emergency use facilities capable of flushing the eyes or drenching the body of an exposed worker with water for 15 minutes.

643.2.1 General. The entire text is removed and replaced by the following:

Materials used in the work shall conform to the requirements specified in the Manual on Uniform Traffic Control Devices and the following:

Retroreflective sheeting on drums, barricades and other devices shall be kept clean. Scratches, rips and tears in the sheeting shall be corrected promptly by the contractor.

The retroreflectance of all drums, posts and barricades shall be maintained at a level not less than 50 percent of the minimum value required in Subsection 637.2.2.2 for Type H reflective sheeting.

643.2.2.1 General. The first paragraph is revised to read as follows:

Arrow boards shall conform to the requirements for Arrow Display, 6F-3, Figure VI-9, Type C, of the MUTCD, unless otherwise specified.

643.2.6.3 Tests. The entire subsection is deleted.

643.2.8.1 General. The following text is added:

The sign face material for overlays shall match the base sign reflective sheeting material.

Non-word messages cannot be a sign overlay.

643.2.8.2 Demountable Plaque Overlay. The second paragraph is revised to read as follows:

The sign face material for the plaque shall be reflective sheeting meeting the requirements of Subsections 637.2.2.1 or 643.2.12.

643.2.8.3 Sheeting Overlay. This subsection is revised to read as follows:

The sheeting overlay shall be a pressure-sensitive sheeting meeting the requirements of Subsection 637.2.2.1 or 643.2.12.

643.2.12 Signs. The following two subsections are added:

643.2.12.1 General. Sign layouts shall be in accordance with the FHWA's Manual of Standard Highway Signs, unless otherwise provided on the plans.

The materials and methods of manufacture and assembly of signs shall be in accordance with the requirements for Type II Signs as specified in Section 637, with the following modifications:

- (1) A good exterior Grade A-B plywood with a 13 mm minimum thickness will be acceptable as a sign base.
- (2) Signs which will have fluorescent orange prismatic sheeting shall also meet the requirements of Subsection 643.2.12.2.

Standard construction signs shall have all messages and borders stencilled directly on the sign background, except as provided in Subsection 643.2.8 for sign overlays.

The sign face material for signs R1-1 (STOP), R1-2 (YIELD), R5-1 (DO NOT ENTER), and R5-1a (or R5-9) (WRONG WAY) shall conform to Subsection 637.2.2.2. All other sign face material shall conform to Subsection 637.2.2.1, except as provided in the contract or except as specified hereinafter for orange work zone traffic control signs.

Retroreflective sheeting on signs shall be kept clean. Scratches, rips and tears in the sheeting shall be corrected promptly by the contractor. Signs with abrasions, asphalt splatter, or concrete slurry on the sign face such that the message or any letters are illegible, shall be corrected or replaced. Signs with noticeable color fading shall be replaced.

643.2.12.2 Orange Work Zone Traffic Control Signs. The sign face material for orange work zone traffic control signs shall be fluorescent orange prismatic retroreflective sheeting having an initial Coefficient of Retroreflection of not less than 100 cd/1x/m² at a 0.2 degree observation angle and a - 4 degree entrance angle, and 64 cd/1x/m² at a 0.5 degree

observation angle and a - 4 degree entrance angle. The sheeting color shall comply with the following chromaticity coordinates and luminance factor:

| | | | | | | | | Luminance Factor(Y%) | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------------------------|------|
| | 1 | | 2 | | 3 | | 4 | Min. | Max. |
| X | Y | X | Y | X | Y | X | Y | | |
| 0.583 | 0.416 | 0.523 | 0.397 | 0.560 | 0.360 | 0.631 | 0.369 | 28 | --- |

The sheeting color and initial Coefficient of Retroreflection shall be verified by independent testing as required by the Department.

The following work zone traffic control signs do not need to have fluorescent orange prismatic sheeting; materials meeting the requirements of Subsection 637.2.2.1 may be used:

- a. G20-2a "End Road Work" signs.
- b. M4-9/M4-8 series "Detour" signs, and MO5-x/MO6-x arrow plaques used in detour sign assemblies.
- c. Special fixed message signs as specified in Subsection 643.2.11 of the Standard Specifications.
- d. Orange plaques which supplement or cover a portion of existing green guide signs.

Fluorescent orange prismatic sheeting shall be applied to new plywood bases, new aluminum bases, or reconditioned aluminum bases which have had all previous sheeting materials removed. Existing signs with prismatic sheeting shall not have their messages removed and new messages reapplied to the sign face except as specified for overlays in Subsection 643.2.8.

Signs in the contractor's inventory which have non-fluorescent prismatic sheeting meeting the Coefficient of Retroreflection for fluorescent prismatic sheeting may be used for work under the contract.

The contractor shall not mix the use of signs having fluorescent prismatic sheeting with signs having non-fluorescent prismatic sheeting.

The retroreflectance of all signs with fluorescent or non-fluorescent orange prismatic sheeting shall be maintained at a level not less than 50 cd/lx/m² at a 0.2 degree observation angle and - 4.0 degree entrance angle, and 32 cd/lx/m² at a 0.5 degree observation angle and - 4.0 degree entrance angle. The retroreflectance of all other orange signs shall be maintained at a level not less than 75 percent of the minimum value required in Subsection 637.2.2.1 for Standard reflective sheeting.

643.3.5.2 Types A (Low Intensity Flashing) and C (Steady Burn). The following paragraph is added:

Type A lights are not required to be installed on signs with fluorescent or non-fluorescent orange prismatic retroreflective sheeting.

**SCHEDULE OF BID ITEMS ADDED AND RETIRED
BY THE 1997 SUPPLEMENTAL SPECIFICATIONS
U.S. STANDARD MEASURE (EAS VERSION 3)**

ADDED BID ITEMS

| <u>Item Number</u> | <u>Description</u> | <u>Unit</u> |
|--------------------|---|-------------|
| 41101 | Asphaltic Surface | Ton |
| 41102 | Asphaltic Surface, Patching | Ton |
| 41103 | Asphaltic Surface, Detours | Ton |
| 41104 | Asphaltic Surface, Safety Islands | Ton |
| 41105 | Asphaltic Surface, Driveways and Field Entrances | Ton |
| 41106 | Asphaltic Surface, Temporary | Ton |
| 41526 | Concrete Pavement, 6 1/2-Inch | S.Y. |
| 41527 | Concrete Pavement, 7 1/2-Inch | S.Y. |
| 41528 | Concrete Pavement, 8 1/2-Inch | S.Y. |
| 41529 | Concrete Pavement, 9 1/2-Inch | S.Y. |
| 41530 | Concrete Pavement, 10 1/2-Inch | S.Y. |
| 41531 | Concrete Pavement, 11 1/2-Inch | S.Y. |
| 41538 | H.E.S. Concrete Pavement, 8 1/2-Inch | S.Y. |
| 41539 | H.E.S. Concrete Pavement, 9 1/2-Inch | S.Y. |
| 41540 | H.E.S. Concrete Pavement, 10 1/2-Inch | S.Y. |
| 41541 | H.E.S. Concrete Pavement, 11 1/2-Inch | S.Y. |
| 50265 | Protective Surface Treatment | S.Y. |
| 50903 | Preparation, Decks, Type 1 | S.Y. |
| 50904 | Preparation, Decks, Type 2 | S.Y. |
| 62002 | Concrete Median Blunt Nose | S.F. |
| 62003 | Concrete Median Sloped Nose | S.F. |
| 61150 | Manhole Covers, Type J-Special | Each |
| 61172 | Inlet Covers, Type HM-GJ | Each |
| 61173 | Inlet Covers, Type HM-GJ-S | Each |
| 61434 | Steel Plate Beam Guard, Slotted Rail Terminal | Each |
| 61435 | Steel Plate Beam Guard, Energy Absorbing Terminal | Each |
| 62826 | Erosion Mat, Delivered, Class I, Type Urban | S.Y. |
| 62827 | Erosion Mat, Installed, Class I, Type Urban | S.Y. |
| 65308 | Pull Boxes, Steel, 12x30-Inch | Each |
| 65309 | Pull Boxes, Steel, 18x30-Inch | Each |
| 65310 | Pull Boxes, Steel, 24x42-Inch | Each |
| 65311 | Pull Boxes, Steel, 24x48-Inch | Each |
| 65410 | Concrete Bases, Type 6 | Each |
| 65719 | Traffic Signal Standards, Steel, 3.5-Foot | Each |
| 65724 | Traffic Signal Standards, Steel, 10-Foot | Each |

| | | |
|-------|--|------|
| 65729 | Traffic Signal Standards, Aluminum, 3.5-Foot | Each |
| 65734 | Traffic Signal Standards, Aluminum, 10-Foot | Each |

RETIRED BID ITEMS

| <u>Item Number</u> | <u>Description</u> | <u>Unit</u> |
|--------------------|---------------------------------|-------------|
| 30421 | Asphaltic Pavement, Base Course | C.Y. |
| 30422 | Asphaltic Pavement, Base Course | Ton |
| 50230 | Protective Surface Treatment | Gal. |
| 50901 | Preparation, Decks | S.Y. |

**SCHEDULE OF BID ITEMS ADDED AND RETIRED
BY THE 1997 SUPPLEMENTAL SPECIFICATIONS
SI METRIC (EAS VERSION 4)**

ADDED BID ITEMS

| <u>Item Number</u> | <u>Description</u> | <u>Unit</u> |
|--------------------|---|-------------|
| 41101 | Asphaltic Surface | Mg |
| 41102 | Asphaltic Surface, Patching | Mg |
| 41103 | Asphaltic Surface, Detours | Mg |
| 41104 | Asphaltic Surface, Safety Islands | Mg |
| 41105 | Asphaltic Surface, Driveways and Field Entrances | Mg |
| 41106 | Asphaltic Surface, Temporary | Mg |
| 41526 | Concrete Pavement, 165 mm | m2 |
| 41527 | Concrete Pavement, 190 mm | m2 |
| 41528 | Concrete Pavement, 215 mm | m2 |
| 41529 | Concrete Pavement, 240 mm | m2 |
| 41530 | Concrete Pavement, 265 mm | m2 |
| 41531 | Concrete Pavement, 290 mm | m2 |
| 41538 | H.E.S. Concrete Pavement, 215 mm | m2 |
| 41539 | H.E.S. Concrete Pavement, 240 mm | m2 |
| 41540 | H.E.S. Concrete Pavement, 265 mm | m2 |
| 41541 | H.E.S. Concrete Pavement, 290 mm | m2 |
| 50265 | Protective Surface Treatment | m2 |
| 50903 | Preparation, Decks, Type 1 | m2 |
| 50904 | Preparation, Decks, Type 2 | m2 |
| 62002 | Concrete Median Blunt Nose | m2 |
| 62003 | Concrete Median Sloped Nose | m2 |
| 61150 | Manhole Covers, Type J-Special | Each |
| 61172 | Inlet Covers, Type HM-GJ | Each |
| 61173 | Inlet Covers, Type HM-GJ-S | Each |
| 61434 | Steel Plate Beam Guard, Slotted Rail Terminal | Each |
| 61435 | Steel Plate Beam Guard, Energy Absorbing Terminal | Each |
| 62826 | Erosion Mat, Delivered, Class I, Type Urban | m2 |
| 62827 | Erosion Mat, Installed, Class I, Type Urban | m2 |
| 65308 | Pull Boxes, Steel, 300 x 750 mm | Each |
| 65309 | Pull Boxes, Steel, 450 x 750 mm | Each |
| 65310 | Pull Boxes, Steel, 24x42-Inch | Each |
| 65311 | Pull Boxes, Steel, 24x48-Inch | Each |
| 65410 | Concrete Bases, Type 6 | Each |
| 65719 | Traffic Signal Standards, Steel, 1.1 m | Each |
| 65724 | Traffic Signal Standards, Steel, 3.0 m | Each |

| | | |
|-------|---|------|
| 65729 | Traffic Signal Standards, Aluminum, 1.1 m | Each |
| 65734 | Traffic Signal Standards, Aluminum, 3.0 m | Each |

RETIRED BID ITEMS

| <u>Item Number</u> | <u>Description</u> | <u>Unit</u> |
|--------------------|---------------------------------|-------------|
| 30421 | Asphaltic Pavement, Base Course | m3 |
| 30422 | Asphaltic Pavement, Base Course | Mg |
| 50230 | Protective Surface Treatment | L |
| 50901 | Preparation, Decks | m2 |

ERRATA SHEET
1997 STANDARD SPECIFICATIONS FOR
HIGHWAY AND STRUCTURE CONSTRUCTION

Subsection

| | |
|-----------|--|
| 407.3.2.1 | Change "Stability" unit of measurement to <u>Newtons</u> ; values remain the same as printed |
| 407.3.2.2 | Ditto |
| 407.3.3.1 | Ditto |
| 407.3.3.2 | Ditto |

Conversion Table. Under the heading "Volume", change "milliliter" to "millimeter".
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